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13 **TITLE: LOW PROFILE COMBINATION SCRUBBING AND SQUEEGEE**

14 **DEVICE**

15 This is a utility patent application based on a provisional patent application (Serial
16 No. 60/258,463) filed on December 27, 2000.

17 **BACKGROUND OF THE INVENTION**

18 1. Field of the Invention:

19 This invention pertains to squeegees, and more particularly, to low profile squeegees
20 used to clean surfaces in tight fitting spaces, such as exterior window surfaces on a cab and a
21 canopy of a pickup truck.

22 2. Description of the Related Art:

23 Combination brush and squeegee heads attached to an elongated handle are
24 commonly used to clean windows. Typically, the brush and squeegee, mounted on opposite
25 sides of a head, are alternatively moved across the window surface to clean and remove water

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from the window, respectively. Unfortunately, the combination of a brush and squeegee mounted on opposite sides of a head creates a relatively tall tool that is not well suited for cleaning windows in tight fitting spaces.

In order to clean the exterior rear window on a pickup truck, the individual usually uses a brush mounted on the end of an elongated handle that enables him or her to stand on one side of the truck and reach across the cab to clean the rear window. The length of the handle must be sufficient so that the user may position the brush at least halfway across the window.

A squeegee is used to completely remove water droplets from the window. In order to operate properly, the edge of the rubber blade on the squeegee must be held tightly at approximately a 30-degree angle against the glass as the blade is continuously pulled across the entire glass. Because the window frame or sill protrudes outward from the glass, the angle of the squeegee must be adjusted as the squeegee is pulled across the glass so that the blade remains in contact with the glass and the squeegee is pulled against the frame or sill.

On a pickup truck with a canopy attached to the bed, the windows on the truck and canopy are approximately one inch apart. Unfortunately, due to the closeness of the windows, typical squeegees are too thick or wide to fit into the space between the windows or manipulated so that the brush or squeegee contacts the entire surfaces of the windows.

What is needed is a low profile combination brush and squeegee device with an elongated pole that allows the user to clean and remove water droplets from truck or canopy windows or other windows located in spaces with narrow clearances.

SUMMARY OF THE INVENTION

It is an object of the present invention to provide a low profile combination brush and squeegee device.

It is another object of the present invention to provide such a device that is attached to an elongated pole that allows the user to reach and clean windows in tight fitting spaces, such as the rear windows on a truck or canopy.

These and other objects of the present invention which will become apparent are met by the low profile combination scrubbing and squeegee device disclosed herein comprising a low profile body with a cleaning surface such as a sponge or brush attached to the top surface, and a thin, squeegee blade attached to the front surface that extends downward from the opposite bottom surface. Connected to the body is an articulating elongated pole that enables the user to stand next to the truck and position the body against the glass to be cleaned. The elongated pole includes a long section and a short section with a first pivoting joint located there between that allows the user to adjust the angular position of the short section of the elongated pole with respect to the long section. Disposed between the distal end of the short section and the body is a rotating joint that enables the user to rotate the body 180 degrees around the center axis. During use, the user may rotate the body so that either the cleaning surface or the squeegee blade may be positioned against the glass without adjusting the first pivoting joint. In the preferred embodiment, the rotating joint includes a hollow central pin, two alignment pins, and a biasing means that tightly holds the body on the distal end of the short section. In the first embodiment, a second pivoting joint is disposed between the short section and the rotating joint that allows the user to selectively adjust the

1 angle of the body with respect to the short section. In a second embodiment, the pivoting
2 joint is replaced with at a fixed angle joint so that the cleaning surface or squeegee blade is
3 always oriented at a fixed angle with respect to the short section. Together, the pivoting and
4 rotating joints allow the user to easily and quickly adjust the angle of the elongated pole and
5 the body so that the device may be continuously and completely moved over close fitting
6 windows.

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8 DESCRIPTION OF THE DRAWINGS

9 Fig. 1 is perspective view of the low profile, combination brush and squeegee device.

10 Fig. 2 is a side elevational view of a pickup truck with a canopy.

11 Fig. 3 is an illustration showing the device being used to clean the rear window of the
12 pickup truck shown in Fig. 2.

13 Fig. 4 is a top plan view of the illustration shown in Fig. 3.

14 Fig. 5 is a top plan view of the invention.

15 Fig. 6 is a bottom plan view of the invention.

16 Fig. 7 is a front elevational view of the device.

17 Fig. 8 is a rear elevational view of the device.

18 Fig. 9 is a side elevational view of the adjustment joint being used to adjust the
19 relative positions of the body and elongated pole.

20 Fig. 10 is a front elevational view of the pivoting joint showing the body being
21 selectively rotated around the elongated pole.

22 Fig. 11 is a sectional view of the rotation joint taken along line 11-11 in Fig. 6.

1 Fig. 12 is a perspective view of a second embodiment of the invention wherein the
2 body is oriented at a fixed angle with respect to the short section on the elongated pole.

3 Fig. 13 is a sectional side elevational view taken along line 13-13 in Fig. 12.

4 Fig. 14 is a sectional end elevational view taken along line 14-14 in Fig. 13.

5 Fig. 15 is a sectional, end elevational view taken along line 15-15 in Fig. 13.

6 Fig. 16A – 16D is a set of side elevational views showing eh movement of the body
7 around the end of the elongated pole.

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9 **DESCRIPTION OF THE PREFERRED EMBODIMENT(S)**

10 Shown in Fig. 1, there is shown a perspective view of a low profile combination brush
11 and squeegee device 10 disclosed herein used to clean windows or glass surfaces in tight
12 spaces.

13 Figs. 2 – 4 show a pickup truck 90 with a front cab 91 and a canopy 92 located behind
14 the front cab 91 and attached over the bed of the truck 90. A narrow gap 97 is formed
15 between the cab 91 and canopy 92. The cab 91 and canopy 92 both include rear and front
16 windows, 94, 95 respectively, which the driver looks through when driving. It should be
17 easily appreciated that both windows 94, 95 become dirty over time. Because the windows
18 94, 95 are placed inside recessed frames and the rear edge of the cab 91 and the front edge of
19 the canopy 92 are only a few inches apart, it is very difficult to clean the entire windows 94,
20 95 with a sponge or brush. While a narrow brush or squeegee mounted on a pole may be
21 used to clean the outer portions of the two windows 94, 95, they cannot be used to clean or
22 remove water droplets from the entire window. The device 10, shown more clearly in Figs. 1

1 – 16D, is a low profile, combination brush and squeegee device 10 designed to allow
2 individuals to easily and quickly clean both windows 94, 95.

3 Figs. 1 – 11 show a first embodiment of the device, generally denoted as 10, which
4 includes a low profile rectangular-shaped body 12, a sponge 20 attached to one planar surface
5 13, and a squeegee blade 30 attached to the opposite planar surface or to the front surface 15
6 (shown). The squeegee blade 30 is designed to extend downward in a direction opposite the
7 sponge 20.

8 The device 10 includes articulating elongated pole 50 designed to allow the user to
9 adjusted the orientation of its distal end so it may be easily inserted between the cab and the
10 canopy and position the body 12 against the glass or surface. As shown in Fig. 1, the
11 articulating elongated pole 50 includes a long section 51 and a short section 55. Disposed
12 between the long section 51 and short section 55 is a first pivoting joint 60 that enables the
13 short section 55 to pivot approximately 120 degrees around the long section's transverse axis
14 52. In the preferred embodiment, the first pivoting joint 60 includes a male and female hinge
15 members 62, 64 with transversely aligned pin 65 disposed between them to pivotally connect
16 them together.

17 Disposed between the distal end of the short section 55 and the body 12 is a second
18 pivoting joint 70 that also allows the distal end of the elongated pole 50 to be further adjusted
19 relative to the longitudinal axis 62 of the long section 51. The second pivoting joint 70 allows
20 the user to extend the elongated pole 50 through the space formed between the cab and
21 canopy without touching the cab or canopy surface and the finely adjust the position the body
22 on the end of the elongated pole 50 so that the squeegee blade 30 is properly position against

1 the glass or surface. Like the first pivoting joint 60, the second pivoting joint 70 allows the
2 body 12 to pivot approximately 120 degrees with respect to the short section's transverse
3 axis 56.

4 As shown in Fig. 5, the second pivoting joint 70 includes a T-shaped receiver 71 with
5 a central neck 72 and two opposite ears 73, 74. During assembly, the neck 72 is forced into
6 the hollow distal end of the short section 55 to attach the receiver 71 to the short section 55.
7 Formed between the two ears 73, 74 is a space 75 in which the central portion 78 of a
8 complementary shaped coupler 77 is inserted. The coupler 77 includes a perpendicularly
9 aligned central portion 78 with a transversely aligned bore 79 formed therein. The front and
10 rear surfaces 80, 81, respectively, of the coupler 77 are flat and perpendicularly aligned to the
11 coupler's transverse axis.

12 Holes 82, 83 are formed in the two ears 73, 74, respectively. During assembly, the
13 receiver 71 and coupler 77 are aligned and registered so that the holes 82, 83 and the bore 79
14 on the coupler 77 are aligned and capable of receiving a pin 84 to rotatably attach the coupler
15 77 to the receiver 71.

16 Also attached to the distal end of the short section 55 adjacent to the second pivoting
17 joint 70 is a rotating joint 85 that enables the body to rotate 180 degrees around the elongated
18 pole's longitudinal axis. In the embodiment shown in Figs. 5-11, the rotating joint 85
19 includes a perpendicularly aligned neck 86 integrally formed or attached to the rear surface of
20 the body 12. The neck 86 includes a flat rear surface 86A with two pegs 87, 88 that extend
21 rearward therefrom. Two bores 78A, 78B are formed on the front surface 80 of the coupler 77
22 receive the pegs 87, 88 to lock the body 12 in position on the coupler 77.

1 Formed centrally inside the receiver 71, the coupler 77 and the neck 86 are three bores
2 75, 81, 87, respectively, which are longitudinally aligned when the device 10 is assembled.
3 During assembly, an elastic cord 40 is extended through the bores 75, 81, 87 to resiliently
4 hold the receiver 71, coupler 77 and the neck 86 together. During assembly, knots are tied
5 on the ends of the elastic cord 40 to prevent it from being pulled through the bores 75, 81,
6 and 87.

7 During use, the body 12 is pulled distally so that the pegs 87, 88 are pulled away from
8 the bores 78A, 78B so that the body 12 is able to rotated 180 degrees so that the sponge 20
9 and squeegee blade 30 may exchange their relative locations on the distal end of the
10 elongated pole 50.

11 The joints 70, 80, 85 are sufficiently stiff so that they maintain their relative positions
12 during use. The joints 70, 80, 85 also work together to allow the user to easily adjust the
13 device 10 to easily use the device on tight fitting, hard to reach surfaces of a vehicle, as
14 shown in Figs. 3 and 4.

15 Shown in Figs. 12 – 16D is a second embodiment of the device, denoted 110, that is
16 easier to use and manufacture. On the device 110', the second pivoting joint 80 is eliminated
17 and the body 112 is offset on the end of the coupler 111 at approximately a ten-degree angle
18 from the longitudinal axis on the short section 55. The coupler 111 includes a half-spherical
19 distal surface that is designed to insert into the curved recessed surface 123 formed on the
20 inside surface of the neck 122 formed on the body 112. The neck 122 is centrally aligned and
21 integrally attached or formed on the body 12. The body 112 includes a flat top surface 113
22 and a diagonally aligned front surface 114. A squeegee blade 30 is attached to the front

1 surface 114. A semi-circular sponge 130 is adhesively attached to the top surface 113 and
2 adhesively attached to the upper edge of the squeegee blade 30. In the preferred embodiment,
3 a longitudinally aligned semi-circular recessed surface 140 is formed on the bottom surface
4 of the body 112. The recessed surface 140 allows the user to avoid the window sill to moved
5 the rubber blade against the outer edge of the glass. Formed centrally in the body 112 and
6 extending from the neck to the recessed surface 140 is a transversely aligned bore 142. In
7 the second embodiment, the front surface 114 of the body 112 that supports the squeegee
8 blade 30 is oriented 35 to 45 degrees from the vertical axis. Together with the 10 degree
9 offset angle of the coupler 111, the squeegee blade 30 may be pulled across the entire glass
10 surface at a properly position for cleaning.

11 Aligned longitudinally inside the short section 55 is an elastic cord 40 that extends
12 through the coupler 110, the neck 122, and the body 112. Knots are tied on the ends of the
13 elastic cord 40 to prevent the ends from slipping through the coupler 111 and body 112.
14 Attached to the inside surface of the neck 112 on opposite sides of the elastic cord 40 are two
15 pegs 146, 148. During assembly, the pegs 146, 148 are inserted into two bores 124, 126
16 formed on the distal end of the coupler 111. The bores 124, 126 are offset at approximately
17 ten degrees from the longitudinal axis of the coupler 111 so that the body 112 is offset
18 approximately ten degrees.

19 During use, the body 112 may be selectively rotated similar to the first embodiment
20 so that the user may use the sponge 20 or blade 30. To rotate the body 112, the body 112 is
21 pulled longitudinally so that the pegs 146, 148 clear the bores 124, 126. The body 112 is then
22 rotated 180 degrees so that the sponge 20 and blade 30 exchange positions. The pegs 146,

1 148 are then inserted into the bores 124, 126 and body 112 to reset on the coupler 111.

2 The second embodiment may be used with or without the first and second pivoting
3 joints 60, 70 assembled in the elongated pole.

4 In the preferred embodiment, the body 12 measures 4 to 6 inches in length, 1 to 1½
5 inches in width, and ½ to 1 inch in thickness. The long section 51 of the elongated pole 50
6 measures approximately 48 inches in length and ½ inch in diameter. The short section 55 of
7 the elongated pole 50 measures approximately 6 inches in length, thus making the overall
8 length of the device 10 approximately 56 inches.

9 In compliance with the statute, the invention described herein has been described in
10 language more or less specific as to structural features. It should be understood, however,
11 that the invention is not limited to the specific features shown, since the means and
12 construction shown, is comprised only of the preferred embodiments for putting the invention
13 into effect. The invention is therefore claimed in any of its forms or modifications within the
14 legitimate and valid scope of the amended claims, appropriately interpreted in accordance
15 with the doctrine of equivalents.

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